

## ***Beginning and Intermediate Algebra***

Math 0304

Practice Final Exam

Solve each equation.

1.  $1.5 + 2z = -3(0.2z + 2.1)$

2.  $4(2x + 3) + x = 3(x - 3)$

3.  $\frac{1}{2}y - \frac{3}{10} = \frac{2}{10} - \frac{1}{2}y$

4. Translate the words into an algebraic equation. Then solve the equation.  
Three times the difference of a number and seven is one less than twice the number.  
Find the number.

5. Solve the inequality. Write the solution in interval notation.

$$-4x + 14 < 7x - 30$$

6. Graph the equation of the line  $y = 1/3x + 2$ .  
Label at least two points (with their coordinates) on the line.

7. Find the slope of the line passing through the points  $(-1, 4)$  and  $(3, -4)$ .

8. A given line has a slope of  $3/4$ .  
(a) What is the slope of the line parallel to the given line?  
(b) What is the slope of the line perpendicular to the given line?

9. Find the x- and the y-intercepts if they exist.  $2x - 4y = -8$ .

10. Write an equation of the line whose slope is  $-1/4$  and whose y-intercept is  $(0, 3)$ .

PROBLEMS 11-14: PERFORM THE INDICATED OPERATIONS

11.  $(10x^2 + 7x - 3) + (-4x^2 + 2x - 7)$

12.  $(3x - 2)(x + 2)$

13.  $(7x + 1)^2$

14.  $\frac{x^2 - x - 6}{x + 2}$

15. Simplify the expression. Answer with positive exponents.  $\left(\frac{x}{y^3}\right)^{-2}$

PROBLEMS 16-20: Completely factor each polynomial.

16.  $x^2 - 4x - 12$

17.  $12x^2 + 17x + 6$

18.  $5x^2 - 20$

19.  $4x^2 + 20x + 25$

20.  $21xy^2 - 35x^2y^5 + 7xy$

21. Simplify:  $\frac{y^2 - 5y}{7y - 35}$

22. Divide:  $\frac{(y-4)^2}{y+3} \div \frac{y^2 - 4y}{5y^2}$

23. Subtract:  $\frac{x-1}{x+3} - \frac{x^2-5}{x^2+2x-3}$

24. Solve:  $\frac{4y}{y-4} + 5 = \frac{5y}{y-4}$

25. Solve the following:

Mr. Crocker can paint his house by himself in 3 days. His son can paint the house by himself in 4 days. Find how long it takes to paint the house if they work together.

# MATH 0304 FINAL PRACTICE TEST ANSWERS

1.  $z = -3$

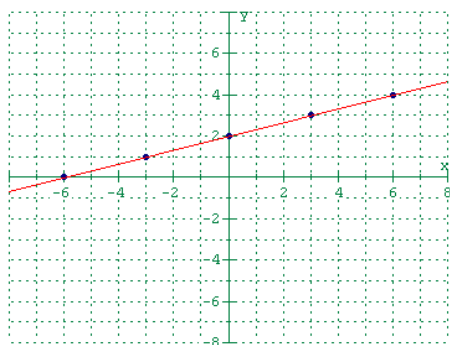
2.  $x = \frac{-7}{2}$

3.  $y = \frac{1}{2}$

4.  $x = 20$

5.  $x > 4, (4, \infty)$

6.



7.  $-2$

8. a)  $\frac{3}{4}$     b)  $-\frac{4}{3}$

9.  $(-4, 0)$   $(0, 2)$

10.  $y = -\frac{1}{4}x + 3$

11.  $6x^2 + 9x - 10$

12.  $3x^2 + 4x - 4$

13.  $49x^2 + 14x + 1$

14.  $x - 3$

15.  $\frac{y^6}{x^2}$

16.  $(x - 6)(x + 2)$

17.  $(3x + 2)(4x + 3)$

18.  $5(x - 2)(x + 2)$

19.  $(2x + 5)^2$

20.  $7xy(3y - 5xy^4 + 1)$

21.  $\frac{y}{7}$

22.  $\frac{5y(y - 4)}{y + 3}$

23.  $-\frac{2(x - 3)}{(x - 1)(x + 3)}$

24.  $y = 5$

25.  $1\frac{5}{7}$  days